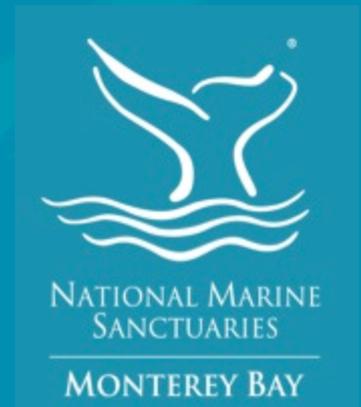




SAC Meeting
Dec. 12, 2013

MBNMS Staff Role in
Desalination Projects



AMERICA'S UNDERWATER TREASURES

MBNMS Desal Concerns

- marine organisms can be killed by impingement against seawater intake screens or by being pulled through the intake system (referred to as entrainment)
- marine life can be significantly impacted by discharge of the saline brine and other by-products produced by desalination
- local seafloor habitat may be significantly altered by construction of intake and outfall structures.



MBNMS Prohibitions

- Discharging or depositing any material within Sanctuary boundaries.
- Discharging materials outside of the boundaries, which subsequently enter sanctuary waters and negatively impact MBNMS resources.
- Activities that cause alteration **on or beneath** the seabed.

Desalination Action Plan

- Framework for a regional approach to address desalination aimed at reducing impacts to marine resources in the sanctuary through:
 - regional planning
 - facility siting issues
 - on-site mitigation measures
 - modeling and monitoring
 - outreach and information exchange

Monterey Bay Regional Desalination Study

Report Outline:

- Water Supply Background
- Overview of Marine Habitats in Monterey Bay
- Site-selection Considerations for Desal Plants
- Desalination Options for Monterey Bay
- Environmental and Socioeconomic Impacts and Mitigation Measures
- Co-location Issues
- Regulatory Considerations

Desalination Feasibility Study
for the
Monterey Bay Region

FINAL REPORT



Prepared For
Association of Monterey Bay Area Governments
November 8, 2006

Desalination Guideline Categories

Environmental Impacts Guidelines:

- Guidelines Regarding Cumulative Impacts
- Entrainment and Impingement
- Brine Discharge
- Energy Use and Greenhouse Gas Emissions
- Co-location with Power Plant
- Co-location with Sewage Treatment Facilities
- Chemicals for Treatment and Cleaning
- Other Environmental and Socioeconomic Impacts
- Guidelines for Desalination Plant Construction Phase

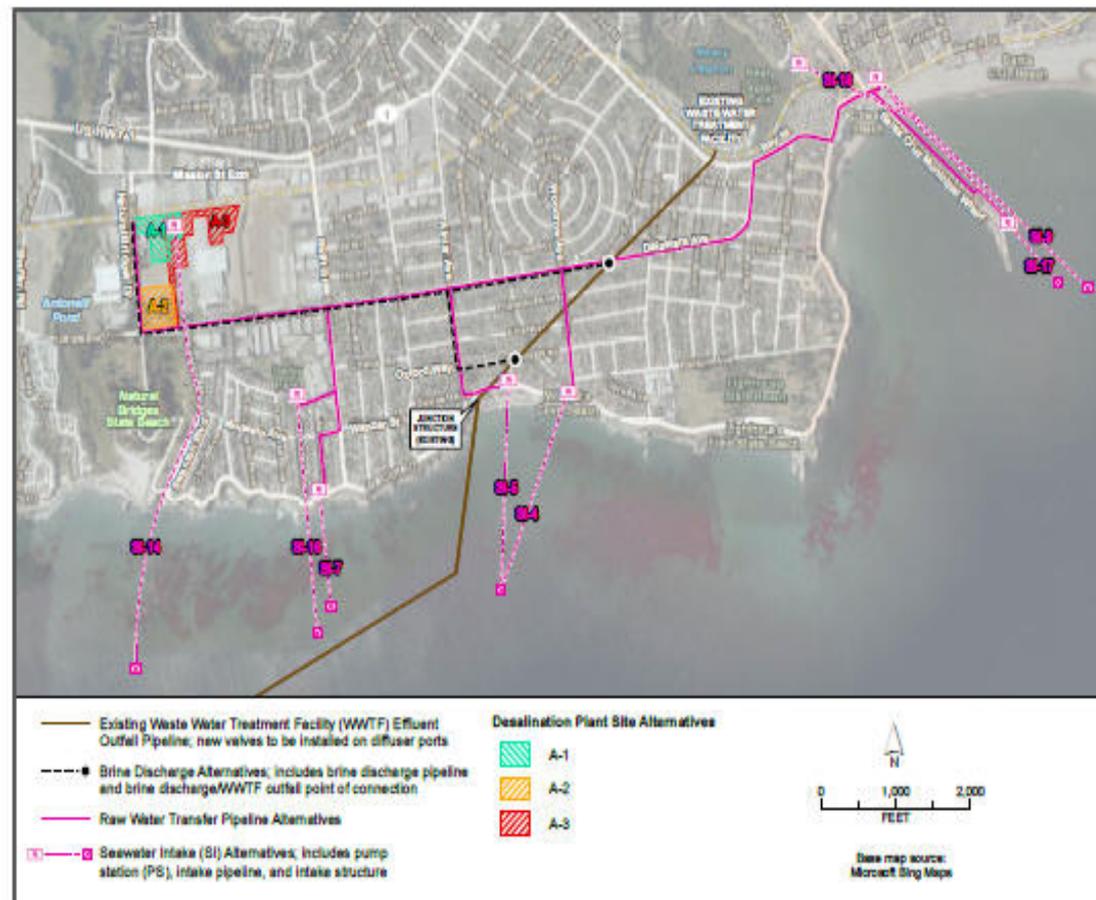


MBNMS Desalination Involvement

- Tracking projects within Monterey Bay
 - Santa Cruz – Soquel Creek (SCWD²)
 - Deep Water
 - CalAm
- Coordinating regulatory discussions with other local, state and federal agencies
- Tracking research efforts
- Tracking SWRCB Ocean Plan amendment

SCWD² Desal

- 2.5 MGD facility
- Open water intake
- Brine to be mixed with Santa Cruz WWTP effluent
- Many years of studies available at <http://www.scwd2desal.org>



Only one plant site and one intake site would ultimately be selected.

SCWD² DEIR

- Comments were due 8/12/13
- Coordinated with other regulatory agencies.
 - Concerns included:
 - Location of intake
 - Noise disturbance
 - Insufficient alternatives analysis
 - Wait for Ocean Plan amendment for desal
- Article in Sentinel on 8/20/13

Deep Water Desal

- 25 MGD desal plant in Moss Landing
- Intake below photic zone
- Brine to mix with Dynegy power plant cooling water

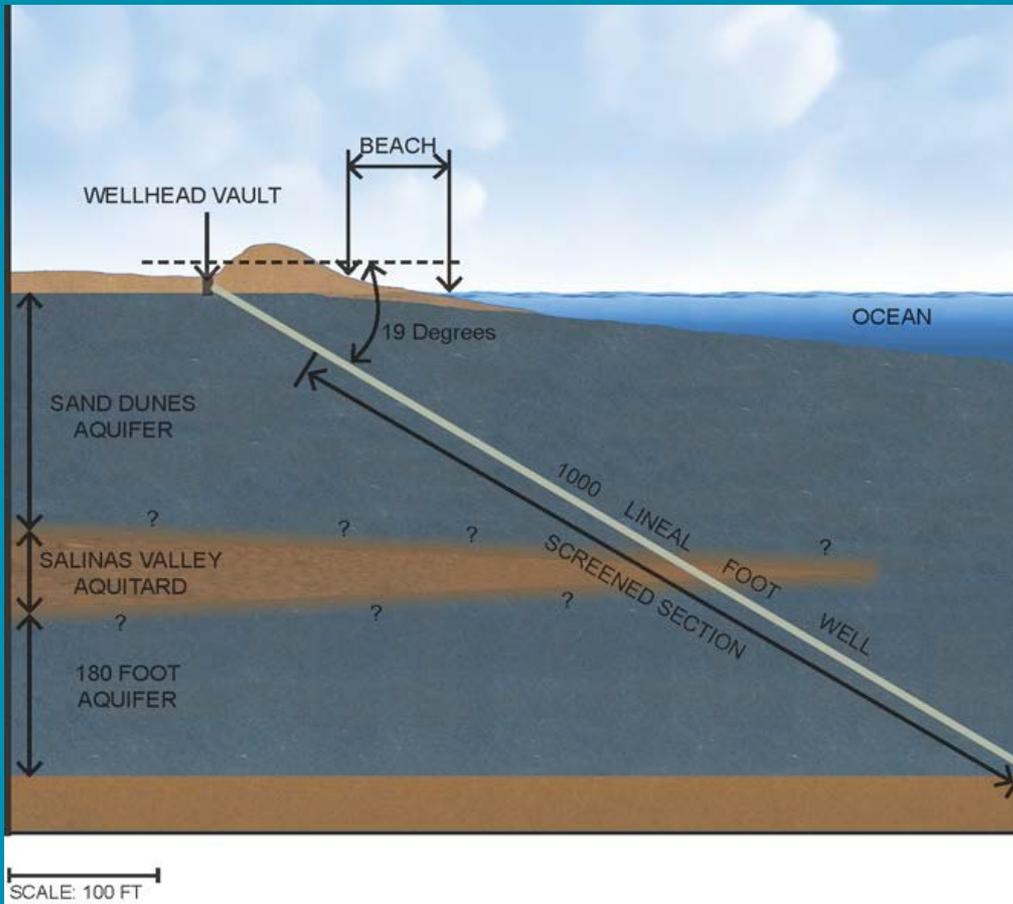


CalAm Slant Well

- 5.4 - 9 MGD capacity
- Subsurface intake
- Brine mixed with MRWPCA effluent
- Potentially up to 9 slant wells
- DEIR in development by CPUC



CalAm Test Slant Well



- Applied for MBNMS permit June 2013 for temporary test well
- MBNMS is federal NEPA lead for test well
- 2500 GPM for 24 months (no treatment)
- BA and Cultural Resource Assessment available
- City of Marina CEQA lead
 - Initial study completed
 - Technical studies underway

Related Studies

- SCWD² – many studies available on website
- DW – non-published study for ocean intake by Tenera Environmental
- SWRCB:
 - Hyper-Salinity Toxicity Thresholds for Nine California Ocean Plan Toxicity Test Protocols (Granite Canyon MPSL)
 - Mitigation and Fees for the Intake of Seawater by Desalination and Power Plants (MLML)
 - Management of Brine Discharges to Coastal Waters Recommendations of a Science Advisory Panel (SCCWRP)

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